

Work Order ID 78489

78489

Page 1

January-10-12 1:14:35 PM

Item ID: D206-667-103

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Crosstube Fwd

Start Date: 1/10/12 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/13/12 Req'd Qty: 1.00

1

Customer:

Reference:

Rework

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
----------	--------------

D206-667-143	Rev C (DEO)
--------------	-------------

DSI9565	A
---------	---

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-103 CHG005

12.01.25

101

0.00

101

HandFinish

Memo

0.00

Hand Finishing

PULL FROM STOCK:
1 X D206-667-103BL B71362

DISASSEMBLE CLAMPS, PUT ASIDE TO REASSEMBLE

STRIP TUBE ENTIRELY

12-01-16

DART Dart Aerospace Ltd. 1270 ABERDEEN ST. HAWKESBURY ONT CANADA K6A 1K7				TC APPROVAL # 09-89 TEL: 1-613-682-6200	
P/N	D206-667-103BL	CHG	CHG005		
DESC.	Crosstube Fwd High	STC	SH01-5		
LOT	B71362	STC	SR01304NY		
MODEL	Bell 206L/L1/L3/L4	STC			

MADE IN CANADA D2729-1

Work Order ID 78489***78489***

Page 2

January-10-12 1:14:35 PM

Item ID: D206-667-103

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Crosstube Fwd

Start Date: 1/10/12

Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/13/12

Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210

0.00

210

SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME:

Start Time: 11:00Finish Time: 11:45

PAINT:

Start Time: 3:45Finish Time: 4:45

1/18 12-01-17

220

QC14- Inspect Spray Paint

0.00

220

QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

S. I. I. I. I.

Work Order ID 78489

78489

Page 3

January-10-12 1:14:35 PM

Item ID: D206-667-103

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Crosstube Fwd

Start Date: 1/10/12

Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/13/12

Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

230

0.00

230

Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1-Abrade mating surfaces of support and crosstube with 400 grit sandpaper, clean the area with 4105S wash 'n' wipe

2-Install supports with Proseal 890 per DSI9565 and QSI 015

A/R Proseal 890 Batch: N/A

3- Torque bolts as per dwg

3-Install nut plates as per Dwg D206-667-143. Touch-up rivet heads with Imron paint.

1/12 12-01-23

240

QC5- Inspect part completeness to step on W/O

0.00

240

QC

Memo

0.00

Quality Control

S. 12/1/24

Work Order ID 78489***78489***

Page 4

January-10-12 1:14:35 PM

Item ID: D206-667-103

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Fwd

Start Date: 1/10/12 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 1/13/12 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start ***NR1***

QC: Date: SPC (Y/N): Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	Pick Kit	0.00							
250									
Packaging	Memo	0.00							
Packaging	USE ORIGINAL KIT								
260	QC4- 100% Inspect kits for completeness	0.00							
260									
QC	Memo	0.00							
Quality Control									
270		0.00							
270	Packaging								
Packaging	Memo	0.00							
Packaging	REPACKAGE USING NEW B/N								
	Identify and pack for shipping as per PPP D206-667-103								
	Location:								
	PPP Rev: <u>E</u>								

SP 12-01-25

12-01-25 (1)

SP 12-01-25

Work Order ID 78489***78489***

Page 5

January-10-12 1:14:35 PM

Item ID: D206-667-103

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Fwd

Start Date: 1/10/12 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 1/13/12 Req'd Qty: 1.00 ***1***

Customer:

Reference:


Approvals: Process Plan: Date: Tooling: Date:

Run Start ***NR1***

QC: Date: SPC (Y/N): Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

12/1/30 
D1201-24

January-10-12 1:14:34 PM

Required Qty: 1.00

1

1

Picklist Print

January-10-12 1:14:34 PM

Page 2

Work Order ID: 78489

Parent Item: D206-667-103

Parent Item Name: Crosstube Fwd

Start Date: 1/10/12

Required Date: 1/13/12

Start Qty: 1.00

Required Qty: 1.00

AN970-4
Washer

original

Purchased No

250 Each 109.0000

12 *M 117795 SP*
12-01-25

Location	Loc Qty	Loc Code
ST344	109	
115936	11	
116900	1	
117795	97	

D206-667-103BL

Crosstube Fwd, Blue

Manufactured No

Each 2.0000

1

Location	Loc Qty	Loc Code
FG114	2	
71042	1	
71362	1	

71362

~~D206-667-103TRN~~

Crosstube Turning Detail

N/A

Manufactured No

110 Each 4.0000

1 1

Location	Loc Qty	Loc Code
LG	4	
74245	1	
74246	1	
77788	1	
77789	1	

D2873-043

Nut Plate Assembly

original

Manufactured No

230 Each 34.0000

2 2

Location	Loc Qty	Loc Code
LG052	34	
72644	2	
73605	12	
75010	20	

71306

D2873-045

Nut Plate Assembly

Manufactured No

230 Each 27.0000

2 2

Location	Loc Qty	Loc Code
LG052	27	
73529	7	
74985	20	

71307x1
71983x1

January-10-12 1:14:34 PM

Shop Packet Print

Page 2

Picklist Print

January-10-12 1:14:34 PM

Page 3

Work Order ID: 78489

Parent Item: D206-667-103

Parent Item Name: Crosstube Fwd

Start Date: 1/10/12

Required Date: 1/13/12

Start Qty: 1.00

Required Qty: 1.00

D2891-1

2.25 Support

original

Manufactured No

230 Each 40.0000

2 2

70734 u

Location

Loc Qty

Loc Code

LG052

40

72822

20

75176

20

Manufactured No

230 Each 98.0000

4 4

70975 u

Location

Loc Qty

Loc Code

MAT052

98

70975

21

74300

77

D3595-063-395

RUBBER CUSHION

RUBBER CUSHION .63" x 3.95" (4)

Purchased No

230 Each 321.0000

14 14

Location

Loc Qty

Loc Code

LG

100

108521

100

LG051

121

117106

7

117381

3

117979

3

118572

8

119107

100

ST322

100

118454

100

117979 u

MS21042L5

Nut

Purchased No

250 Each 2,022.0000

4 4

*m 116548 SP
12-01-25*

Location

Loc Qty

Loc Code

ST300

2022

116105

5

116548

43

117611

50

118179

424

119109

1500

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Shop Packet Print

Page 3

Picklist Print

January-10-12 1:14:34 PM

Page 4

Work Order ID: 78489

Parent Item: D206-667-103

Start Date: 1/10/12

Required Date: 1/13/12

Parent Item Name: Crosstube Fwd

Start Qty: 1.00

Required Qty: 1.00

MS21920-20

original

Purchased

No

230

Each

60.0000

4

4

Clamp (per MIL-DTL-8783C)

Location

Loc Qty

Loc Code

LG050

60

116799

10

119386

50

117279 u

January-10-12 1:14:34 PM

Shop Packet Print

Page 4

Item	Qty -143	Part Number	Description
1	X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 104.98±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 15.5 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN.-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

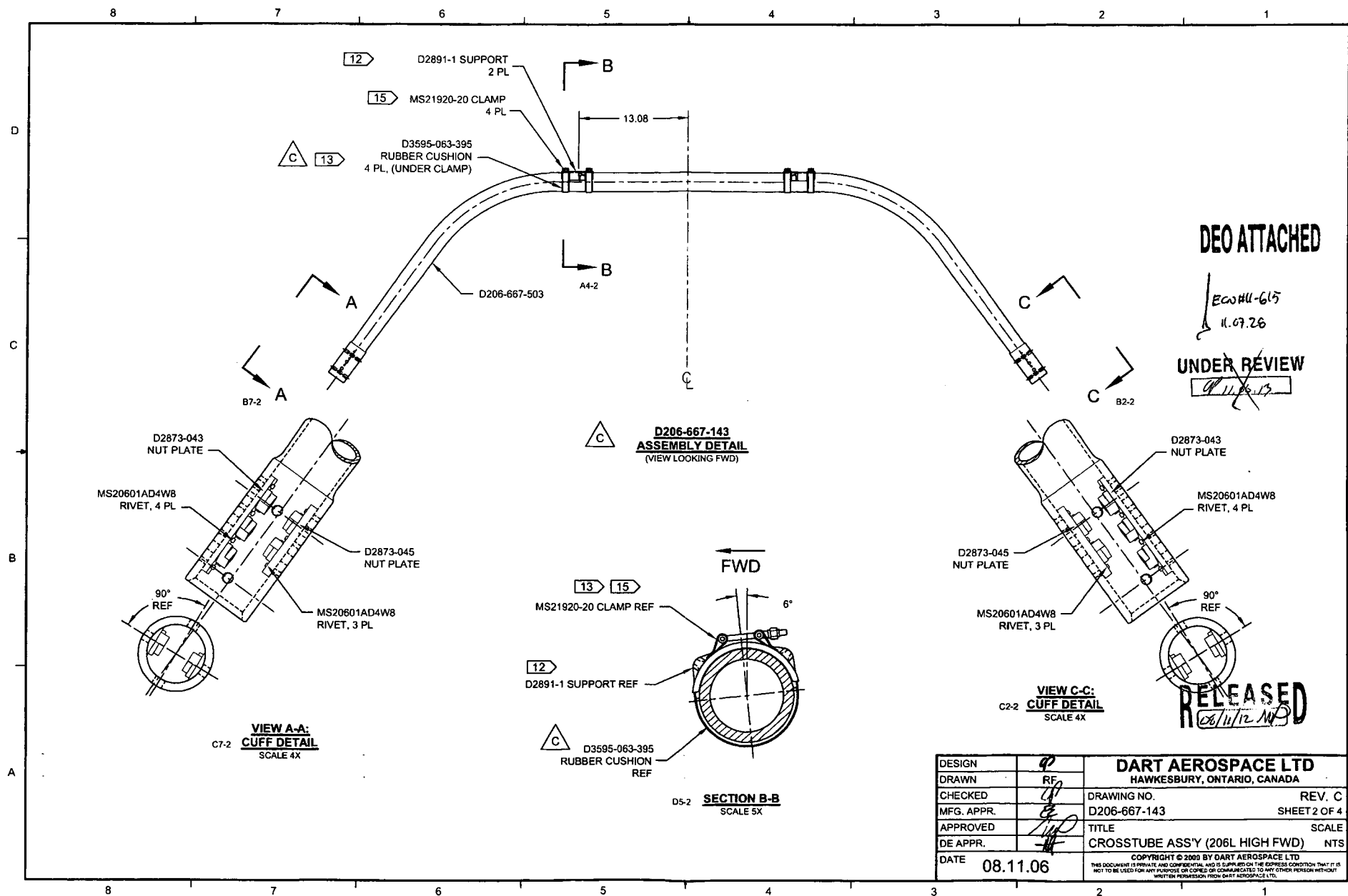
OCW #1-615
11.07.28

UNDER REVIEW

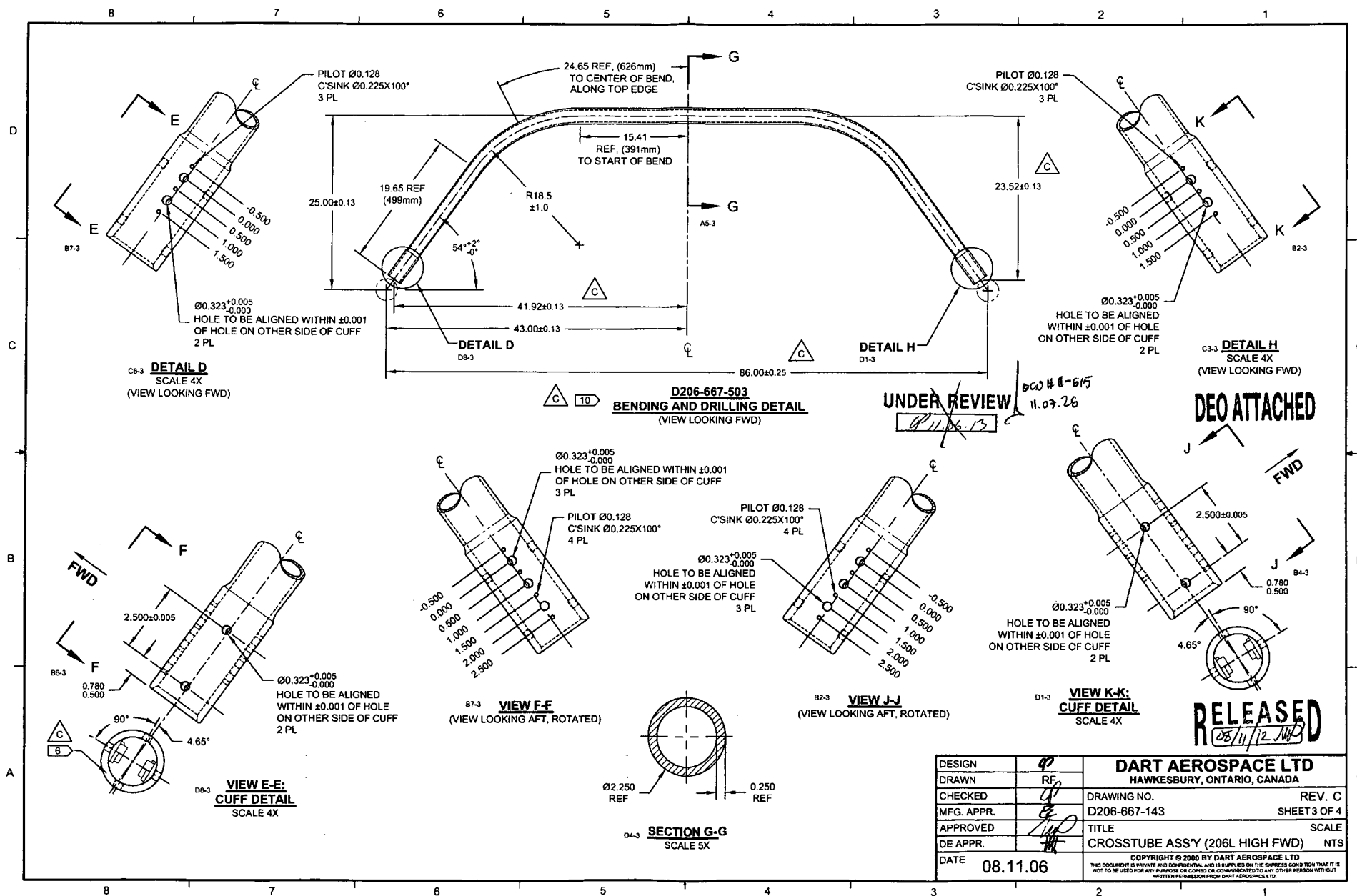
08/11/03

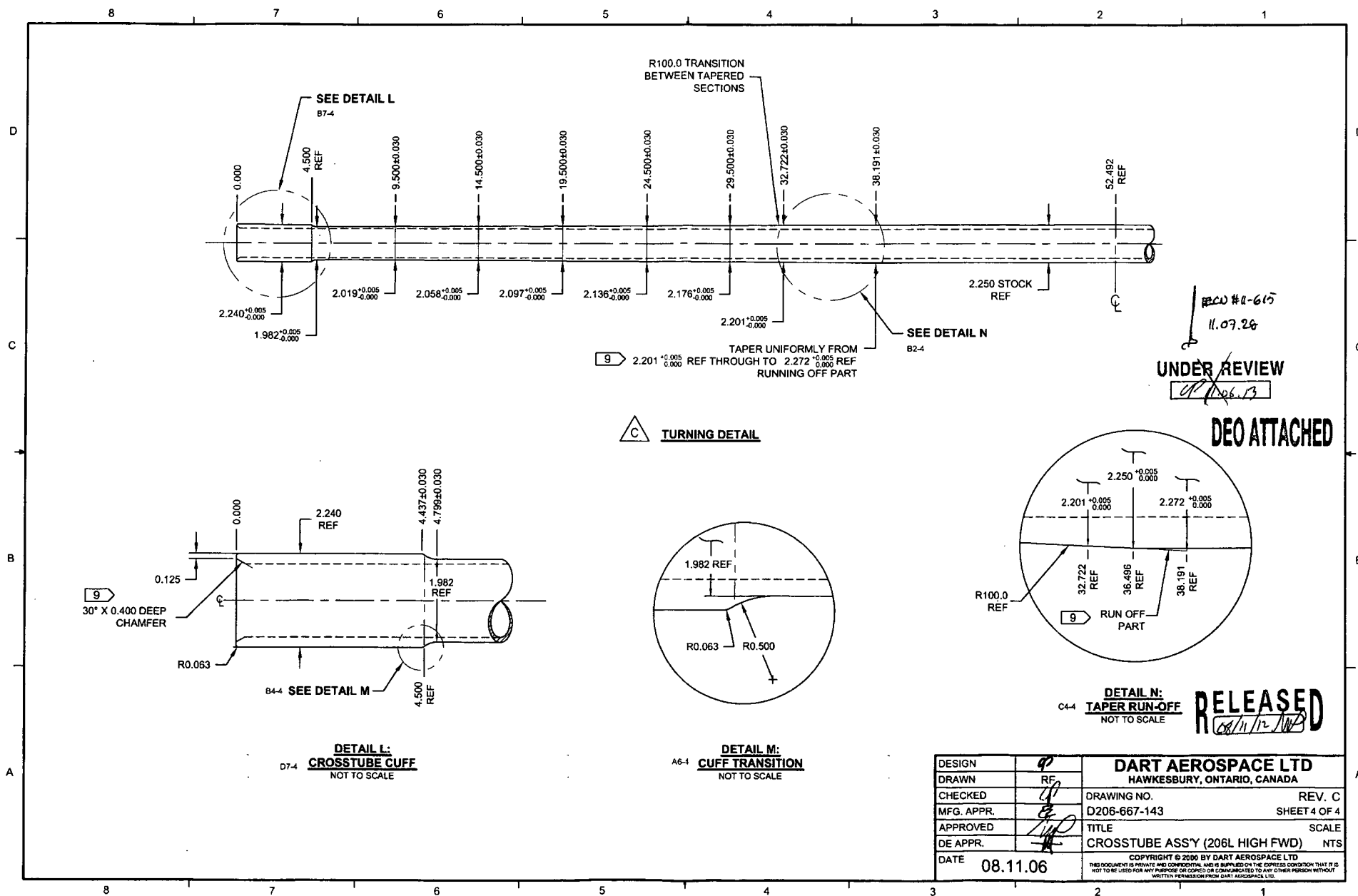
DEO ATTACHED RELEASED
08/11/12

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D8-2 & A5-2); REMOVED REF. & ADD TOLERANCE (ZN D3-3, C4-3, C5-3); RELOCATED FLAG #8 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-143	SHEET 1 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASS'Y (206L HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



DESIGN	90	DART AEROSPACE LTD
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA
CHECKED	40	DRAWING NO. REV. C
MFG. APPR.	40	D206-667-143 SHEET 2 OF 4
APPROVED	40	TITLE SCALE
DE APPR.	40	CROSSTUBE ASSY (206L HIGH FWD) NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD
		THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.





REC'D #11-615
11.07.26

UNDER REVIEW

08/11/12

DEO ATTACHED

DRAWING NO. D206-667-143	TITLE CROSSTUBE ASS'Y (206L HIGH FWD)	REV. C	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D206-667-143-C-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>q</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>MD</i>	APPROVED <i>MD</i>		DE APPR. <i>MD</i>		
DATE 11.07.15	DATE 11.07.20	DATE 11.07.21	DATE 11/07/21		DATE 11.07.21		

PURPOSE:

REPLACE MAGNOBOND WITH PROSEAL.

CHANGE:

IS:

Item	Qty -143	Part Number	Description
9	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

WAS:

9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
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NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) TO INSTALL D2891-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

WAS:

- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
2011-07-28
MD

Work Order ID 83494

April-19-12

Page 1

Item ID: D206-667-103

Revision ID:

Item Name: Crosstube Fwd

Draw Nbr: DSI9565

Start Date: 4/19/12

Start Qty: 1.0000

Revision Nbr: A

Required Date: 4/19/12

Reqd Qty: 1.0000


Reference: to correct cost and pull BL

Cust Item ID:

Customer ID:

Description:

Sales Order:

Approvals: Process Plan: 
QC:

Date: Tooling: Date:
Date: SPC (Y/N): Date:

Hours

Sequence ID	Work Center ID	Operation Description	Set Up	Run	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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SEAN w/ 78489

w 1204.19

Picklist Print

April-19-12 9:02:13 AM

Page 1

Work Order ID: 83494
 Parent Item: D206-667-103
 Parent Item Name: Crosstube Fwd

Start Date: 4/19/12 Required Date: 4/19/12
 Start Qty: 1.00 Required Qty: 1.00

Comments: IPP Rev:F 05.09.01 Add holes for compatibility with Bell SkidtubesKJ/JLM
 IPP Rev:G 08-06-03 update as per DSI9415 (ECN1198) DD verified by:
 IPP Rev: H 08.11.17 QC5 was QC6 at step 12 KJ verified by: EC
 IPP Rev:I 08-12-15 add magnobond DD verified by:EC
 IPP Rev J 09.01.06 ECN 08-562 EC verified by: DD
 IPP Rev:K 09-01-19 as per DSI9439 DD verified by:EC IPP REV:L 11.08.05 PER ECN 11-615 DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D206-667-103 Crosstube Fwd		Manufactured	No				Each	6.0000		1			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				FG		2							
				72709		1							
				73653		1							
				FG053		4							
				76448		1							
				76449		1							
				78488		1							
				78489		1							
D206-667-103BL Crosstube Fwd, Blue		Manufactured	No				Each	0.0000		1			

78489

83094

Work Order ID 78489

78489

Page 1

January-10-12 1:14:35 PM

Item ID: D206-667-103

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Crosstube Fwd

Start Date: 1/10/12 Start Qty: 1.00

1

Cust Item ID:

Required Date: 1/13/12 Req'd Qty: 1.00

1

Customer:

Reference: Rework

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D206-667-143	Rev C (DEO)
DSI9565	A

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-103 CHG005

12.01.25.01

101

0.00

101

HandFinish

Memo

0.00

Hand Finishing

PULL FROM STOCK:
1 X D206-667-103BL B71362

DISASSEMBLE CLAMPS, PUT ASIDE TO REASSEMBLE

STRIP TUBE ENTIRELY

12-01-16

DART Dart Aerospace Ltd. 1270 ABERDEEN ST. HAWKESBURY ONT CANADA K6A 1K7				TO APPROVAL #09-89 TEL: 1-613-632-5200	
PN	D206-667-103BL	CHG	CHG005		
DESC	Crosstube Fwd High	STC	SH01-5		
LOT	B71362	STC	SR01304NY		
MODEL	Bell 206L/L1/L3/L4	STC			
MADE IN CANADA					

List Lots

April-12-12 7:21:09 AM

Page 1 of 1

Criteria : Item ID: d206-667-103bl All Locations All Warehouses All Quantity

Item ID Item Name	Warehouse ID Location ID	Lot Number	Last Trans Date	Lot Qty	Shelf Life Dt	Lot Code	Type Code	Comments
D206-667-103BL Crosstube Fwd, Blue	Main Warehouse FG114	71042	9/21/11	1.0000		QC21	CHG005	
	Main Warehouse FG114	71362	8/04/11	1.0000				
Total:				2.0000				

78486
78489

83493
83494